Exploiting Real-Time Data with ArcGIS GeoEvent Processor for Server

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GIS data

- Typically represents state at a specific moment in time: “historic”, “current”, or “future”.

Credit: iStockphoto/chris_lemmens
Real-time GIS data
...continuous stream of events flowing from sensors representing the latest state.
Analyzing real-time GIS data

...Are my field personnel working within the designated project area?
Analyzing real-time GIS data

Challenge #3

Continuous Analysis

Enter Customer Area

Features

Delivery Vehicle Notification

Applications

Mobile Desktop Web Runtime

...Tell customer when their delivery truck is 15 minutes away.
ArcGIS supports real-time GIS

Collector

Real-time data

ArcGIS Online / Portal for ArcGIS

Operations Dashboard

ArcGIS Server

GeoEvent Processor
ArcGIS GeoEvent Processor for Server
Working with real-time data
Receiving real-time data

Input connectors...

You can add your own connectors.

ArcGIS for Server

GeoEvent Processor

Real-time data

Receive Tweets
Receive Instagram
Receive Trimble
Receive Sierra Wireless
Receive NMEA
Receive GPX

Receive NMEA
Receive GPX
Receive Air Traffic Control
Receive Cursor-on-Target
Receive VMF
Receive Geomessages
Receive Vessels

Receive from a Socket
Receive from a Web Socket
Receive on a REST Endpoint
Receive RSS
Poll an ArcGIS Server
Poll an external website
Watch a folder for new Files
Receive RSS
Receive from a Socket
Receive from a Web Socket
Poll an external website
Demonstration: Twitter monitoring
Sending real-time data

Output connectors...

You can add your own connectors

Real-time data

ArcGIS for Server
GeoEvent Processor

Mobile Desktop Web Runtime

Send to CESIUM
Send to Tracking Analyst
Send a Tweet
Send a Text Message
Send an Instant Message
Send to a Web Socket
Send to a Socket
Write to a File

Write to Hadoop
Write to MongoDB
Send to HornetQ
Send to ActiveMQ
Send to RabbitMQ
Send an email
Update a Feature
Add a Feature
Publish to REST Endpoint
Sending real-time data to features

Using local feature services

ArcGIS for Server

GeoEvent Processor

Filters

Processors

GeoEvent Services

Inputs

Outputs

Real-time data

Your Dashboards

Operations Dashboard for ArcGIS

ArcGIS Online / Portal

operation view

web map

feature layers

Your Applications

Web APIs

- JavaScript
- Flex
- Silverlight/WPF

Mobile GIS

- iOS
- Android
- Windows Phone

Runtimes

- Windows Store
- Mac OS X
- Java
- Qt

Real-time data

Update a Feature

Add a Feature
Sending real-time data to features

Using remote feature services...

ArcGIS for Server

GeoEvent Processor

GeoEvent Services

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Outputs

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feature layers

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Java

Qt

Real-time data

GeoEvent Services

Update a Feature

Add a Feature

Your Applications
Sending real-time data to features

Using ArcGIS Online feature services...

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Qt

Update a Feature
Add a Feature
Sending real-time data to big data stores

Write to a Hadoop Distributed File System (HDFS)
Write to a MongoDB Document Store
Performing continuous processing and analysis
Continuous processing and analysis

GeoEvent Services...

ArcGIS for Server

GeoEvent Processor

Real-time data

Mobile Desktop Web Runtime

Twitter Monitor (GeoEvent Service)

Twitter Input

Geolocated Filter

Add Tweet Feature

Write Tweets to Hadoop
Continuous processing and analysis

ArcGIS Server with GeoEvent Processor

GeoEvent Service

- GeoTagger
- Field Calculator
- Field Enricher
- Field Reducer
- Field Mapper
- Incident Detector

Input 1

Output 1

Processors...
Demonstration | Vehicle monitoring

Alerts

- AMB-15 is approaching Hospital. Started at Sun Mar 24 02:19:00 PDT 2013
- AMB-15 is inside a Dangerous area. Ended at Sun Mar 24 01:56:00 PDT 2013 and lasted for 13 minutes.
- AMB-15 is speeding. Ended at Sun Mar 24 01:25:00 PDT 2013 and lasted for 8 minutes.
Wrap Up
Real-time GIS with GeoEvent Processor

Summary

• ArcGIS is a dynamic platform that enables real-time visualization, continuous analysis, and understanding of our world.

• GeoEvent Processor allows you to:
  - be alerted when interesting events occur
  - react and make smarter decisions faster
  - to know what is happening, as it happens

• Product Page
  - http://pro.arcgis.com/share/geoevent-processor
questions & answers
esri
Understanding our world.